

# (12) United States Patent Ossipov et al.

## (54) INJECTOR CARTRIDGE WITH IMPROVED LUBRICITY

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#### (57)ABSTRACT

An inorganic-organic hybrid coating applied to a polymer and method for forming same to provide improved hydrophilicity and lubricity to the surface of the polymer. The hydrophilic coating is on the order of one micron thick, as is formed by activating the surface of the polymer, reacting the activated surface of the polymer with a Lewis acid metallic composition, and then quenching the coating in salt solution having a pH>7.2 at a temperature above the glass transition temperature (T<sub>e</sub>) of the polymer.

### 8 Claims, 14 Drawing Sheets

